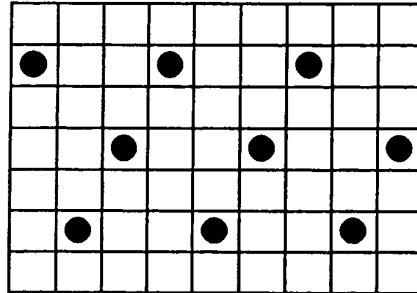


Fig. 1(A)

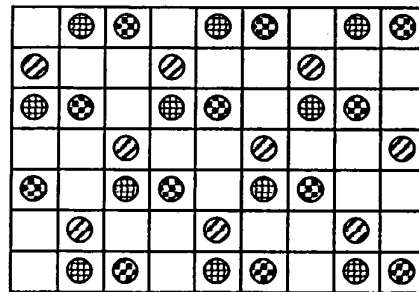
GRAY COLOR AREA REPRODUCED BY BLACK INK



● : black ink dot

Fig. 1(B)

GRAY COLOR AREA REPRODUCED BY COMPOSITE BLACK



⊗ : cyan ink dot

⊗ : magenta ink dot

⊗ : yellow ink dot

Fig. 2(A)
SPECTRAL DISTRIBUTION
OF SUNLIGHT
(standard light D50)

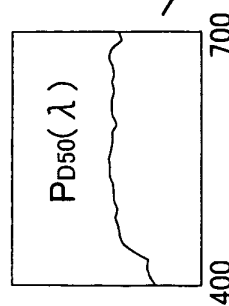


Fig. 2(B)
SPECTRAL DISTRIBUTION
OF INCANDESCENT LAMP
(standard light A)

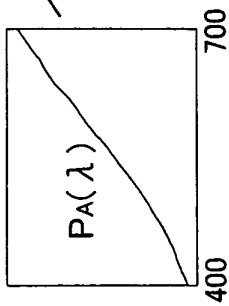


Fig. 2(C)
SPECTRAL REFLECTANCE
OF GRAY AREA PRINTED
WITH COMPOSITE BLACK

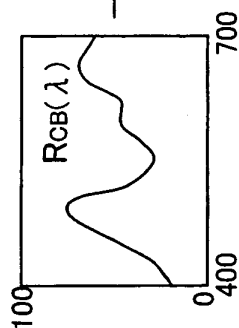
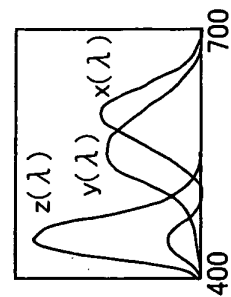


Fig. 2(D)
COLOR-MATCHING
FUNCTIONS



$(X, Y, Z)_{D50}$ \longleftrightarrow $(X, Y, Z)_A$
large difference

tristimulus values X, Y, Z
 $X = k \int P(\lambda) \cdot R(\lambda) \cdot x(\lambda) d\lambda$
 $Y = k \int P(\lambda) \cdot R(\lambda) \cdot y(\lambda) d\lambda$
 $Z = k \int P(\lambda) \cdot R(\lambda) \cdot z(\lambda) d\lambda$

Fig. 3(A)

SPECTRAL DISTRIBUTION
OF SUNLIGHT
(standard light D50)

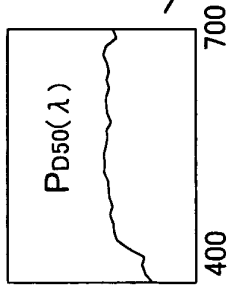


Fig. 3(B)

SPECTRAL DISTRIBUTION OF
INCANDESCENT LAMP
(standard light A)

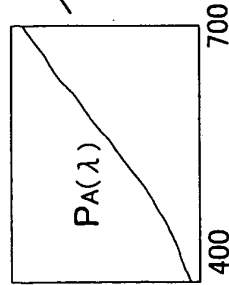


Fig. 3(C)

SPECTRAL REFLECTANCE
OF GRAY AREA PRINTED
WITH BLACK INK ALONE

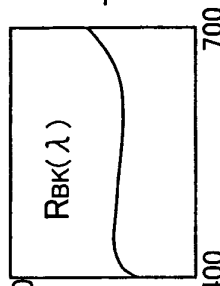
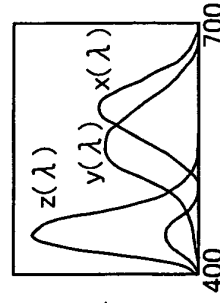


Fig. 3(D)

COLOR-MATCHING
FUNCTIONS



$(X, Y, Z)_{D50}$
↕
small difference
↕
 $(X, Y, Z)_A$

tristimulus values X, Y, Z
 $X = k \int P(\lambda) \cdot R(\lambda) \cdot x(\lambda) d\lambda$
 $Y = k \int P(\lambda) \cdot R(\lambda) \cdot y(\lambda) d\lambda$
 $Z = k \int P(\lambda) \cdot R(\lambda) \cdot z(\lambda) d\lambda$

Fig. 4

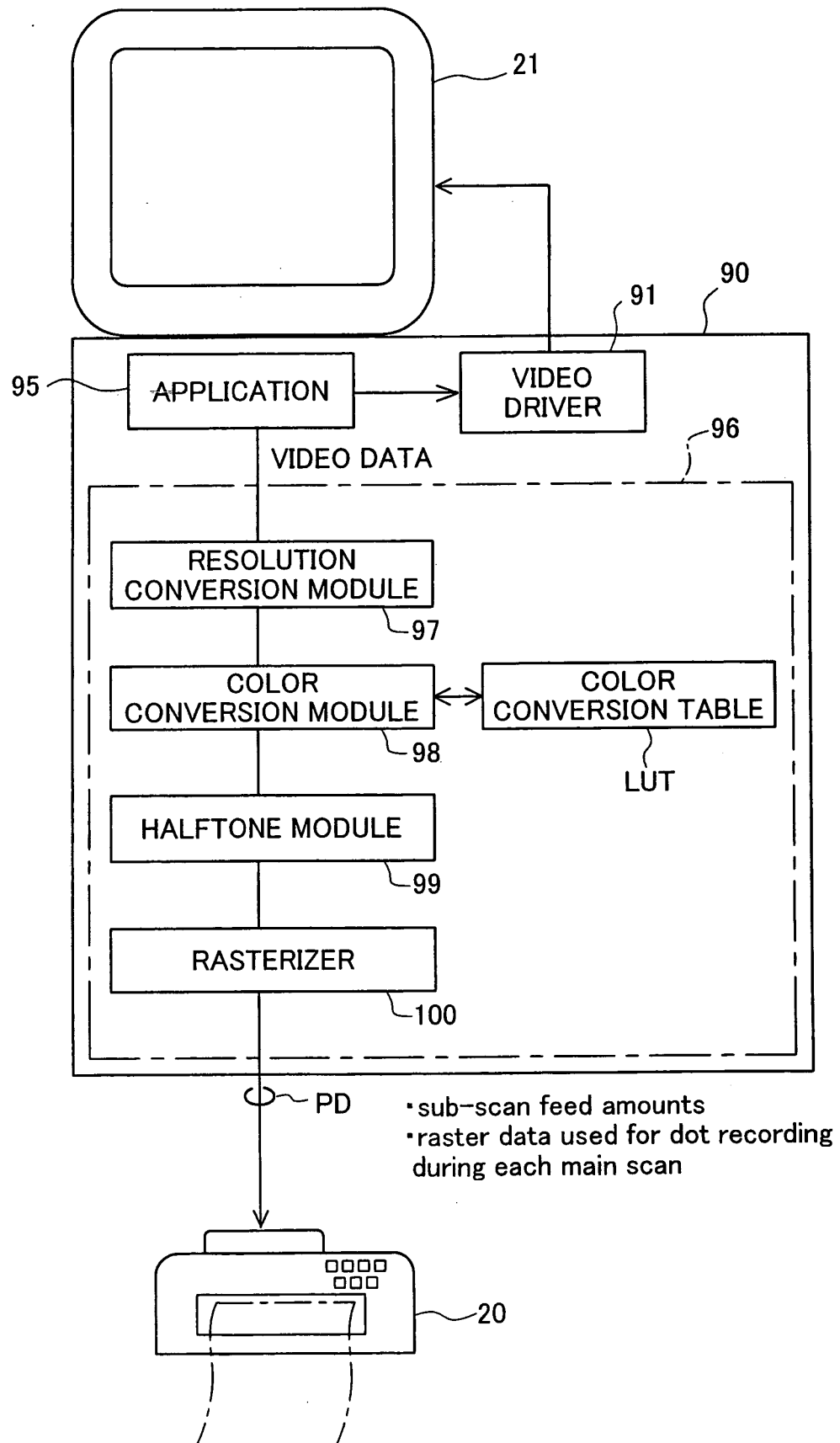


Fig. 5

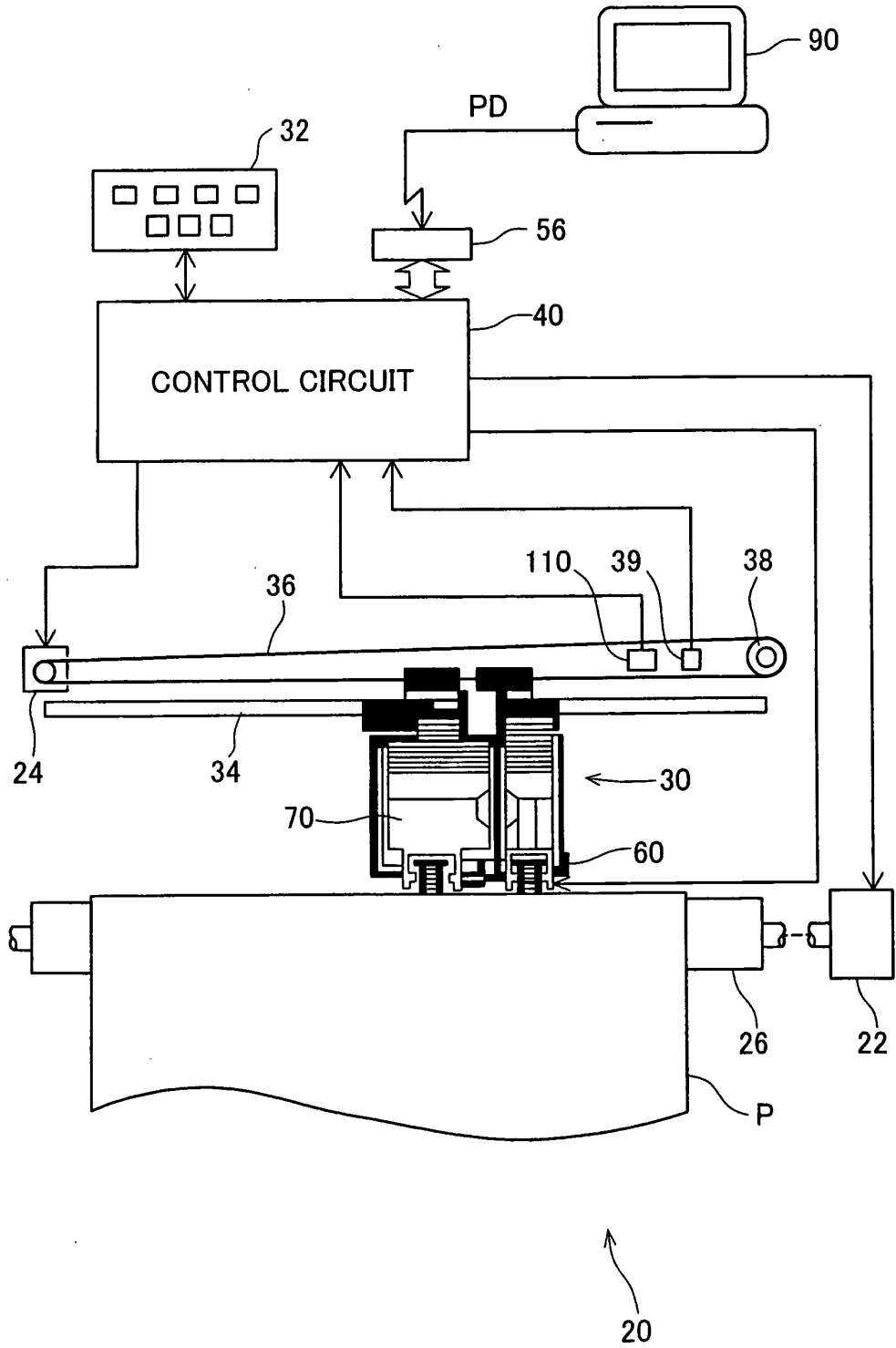


Fig. 6

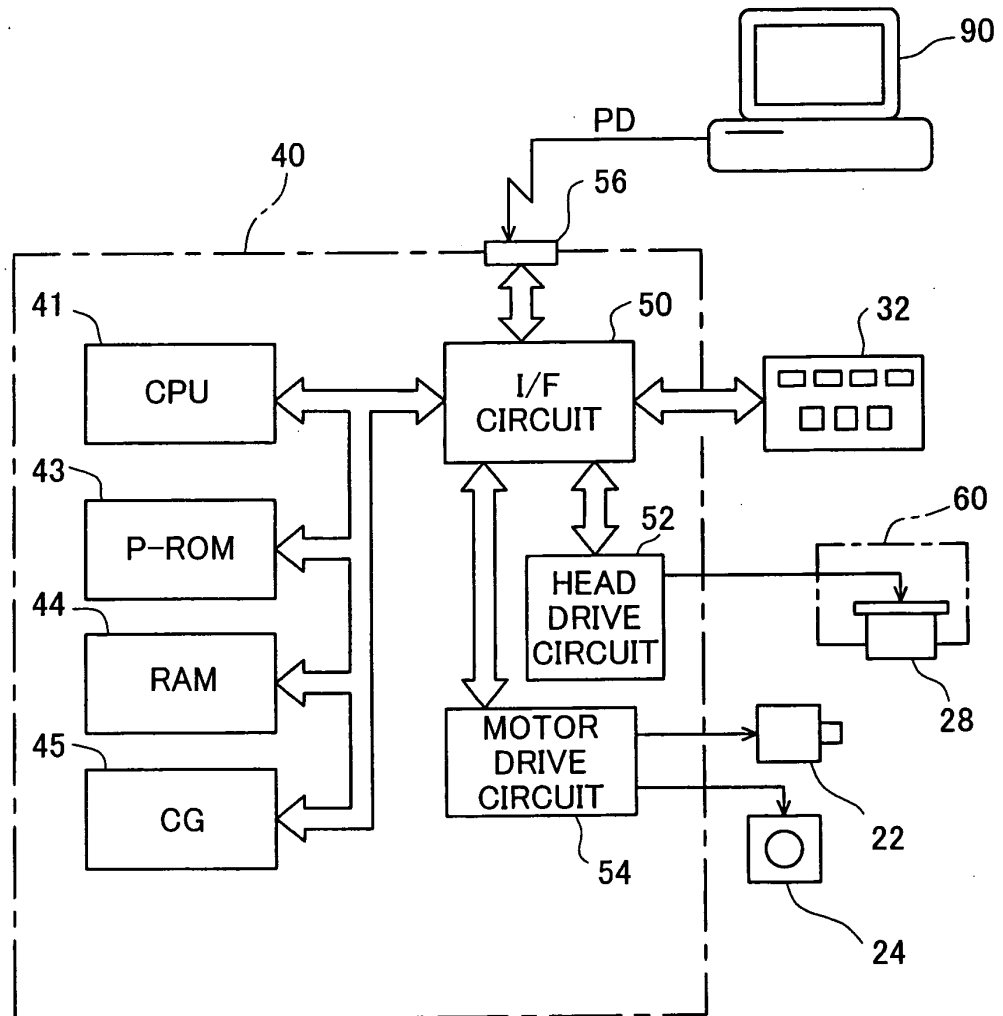


Fig. 7

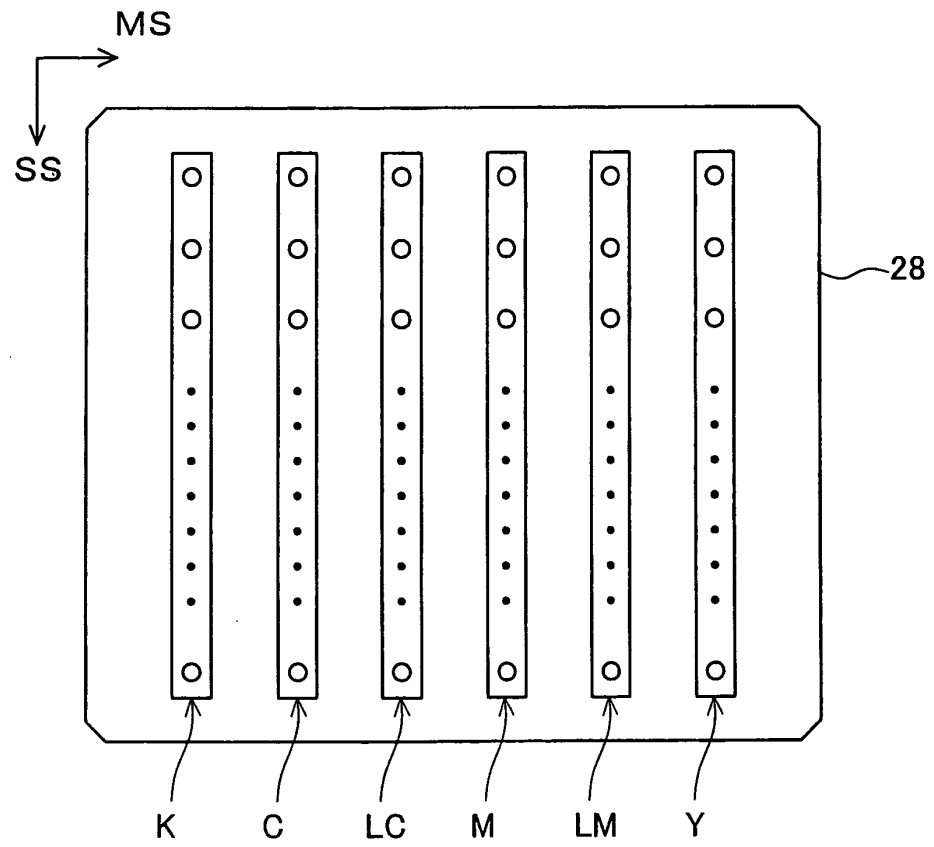
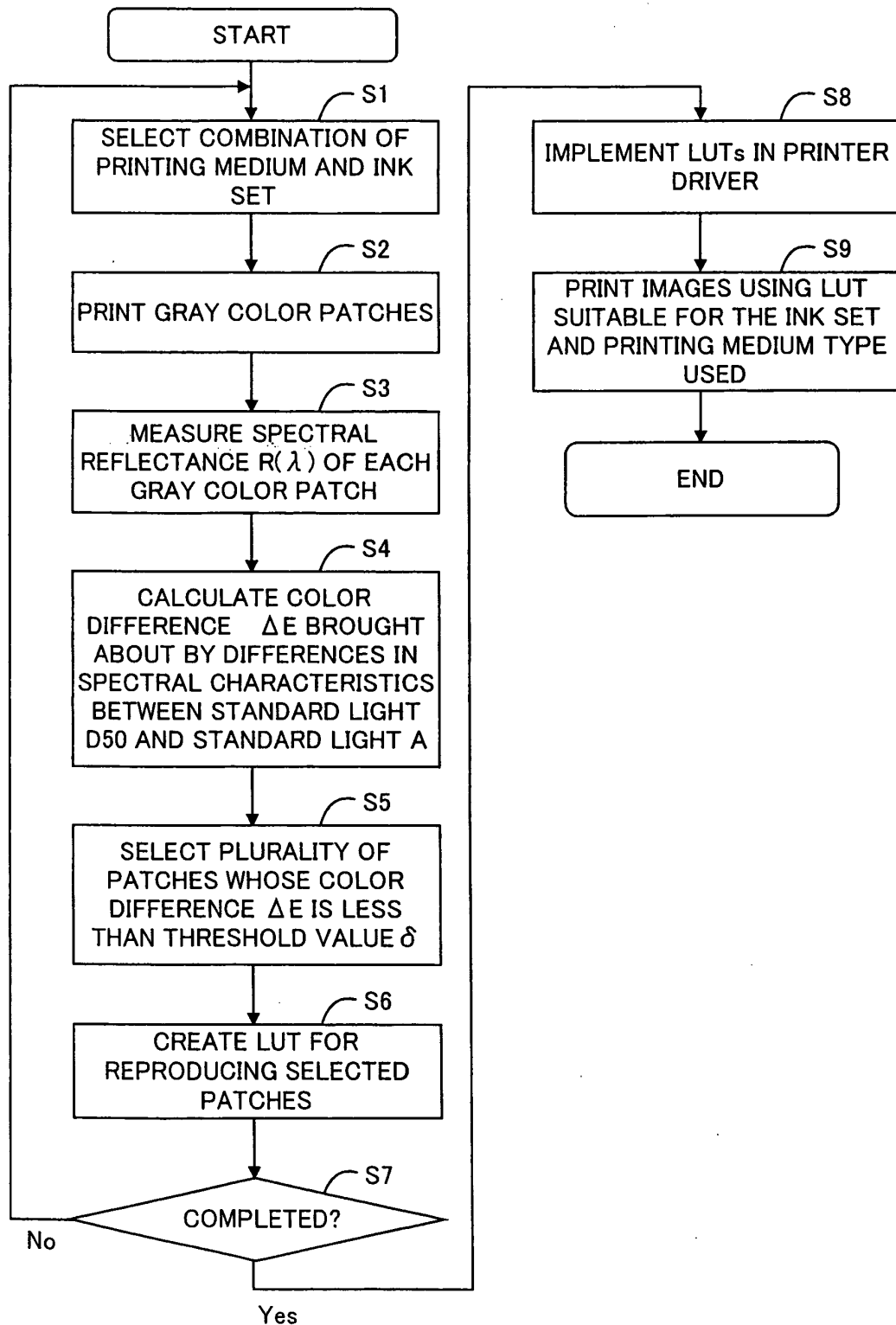


Fig. 8



GRAY COLOR PATCHES

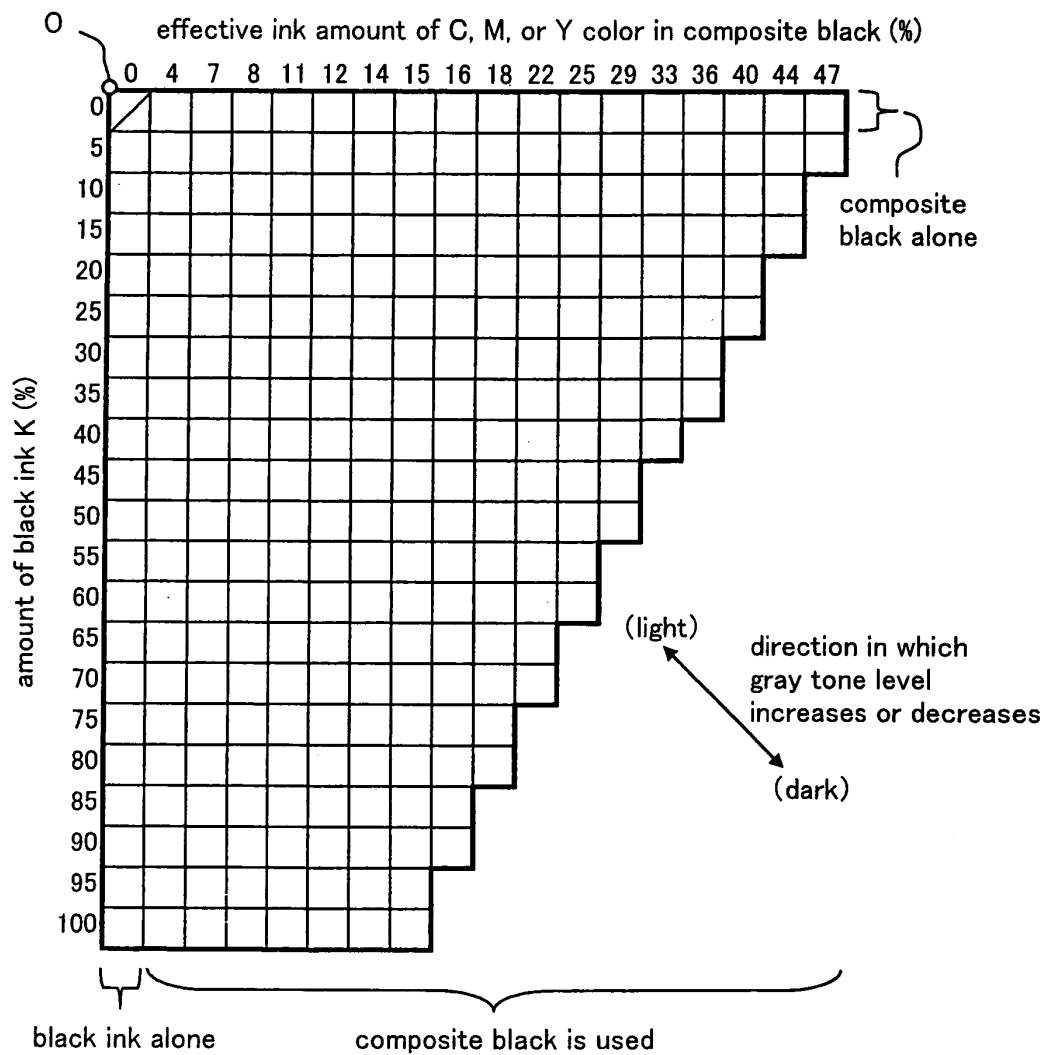
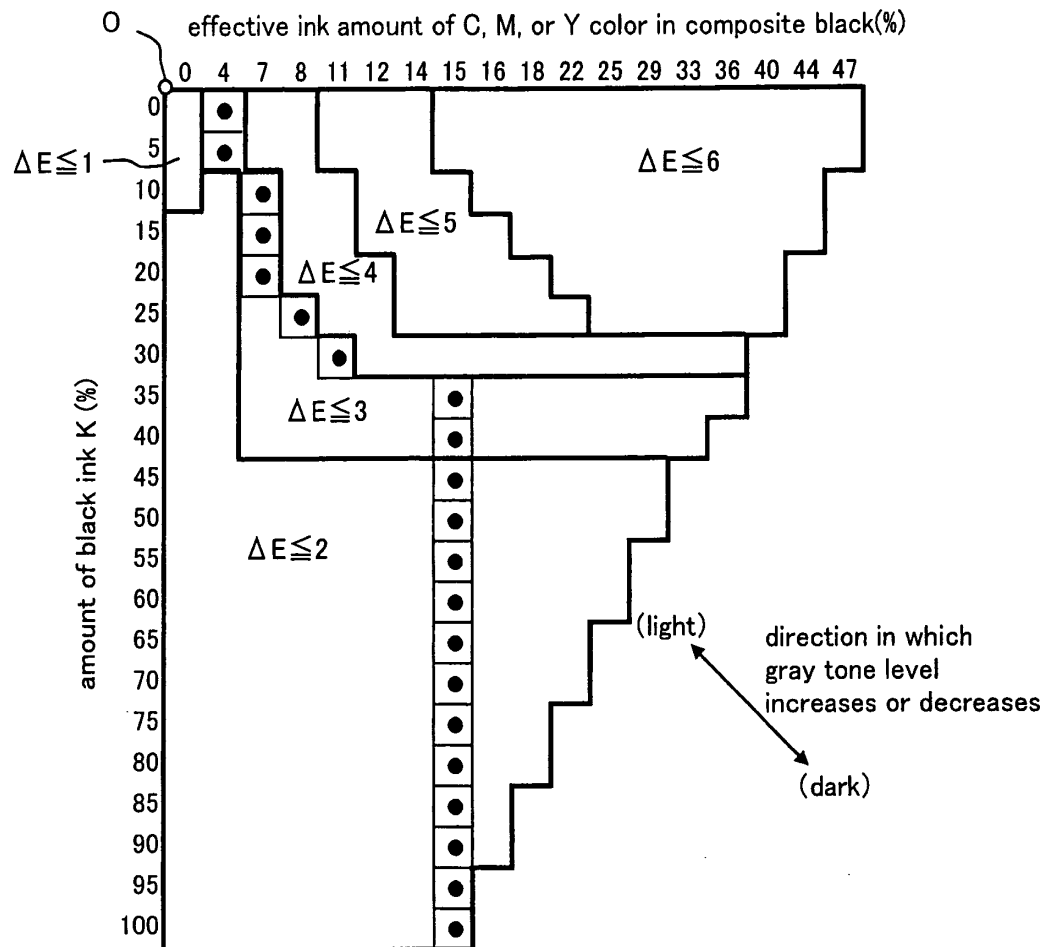


Fig. 10



ΔE : color difference due to difference in spectral characteristics between standard light D50 and standard light A

● : patches used for actual gray color reproduction (threshold value δ of color difference ΔE is equal to 3)

Fig. 11(A)

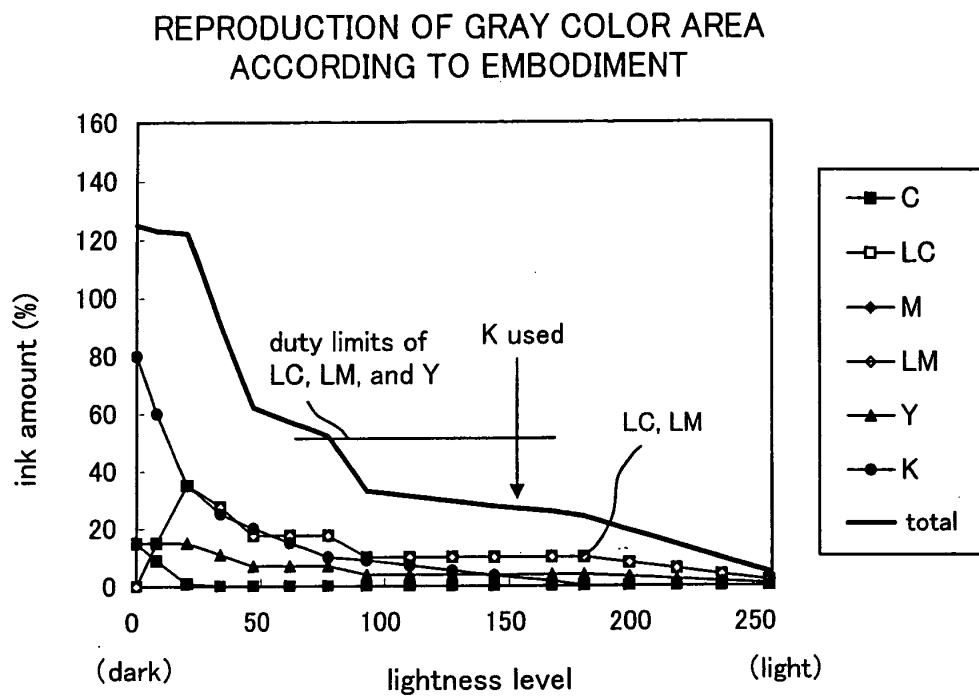


Fig. 11(B)

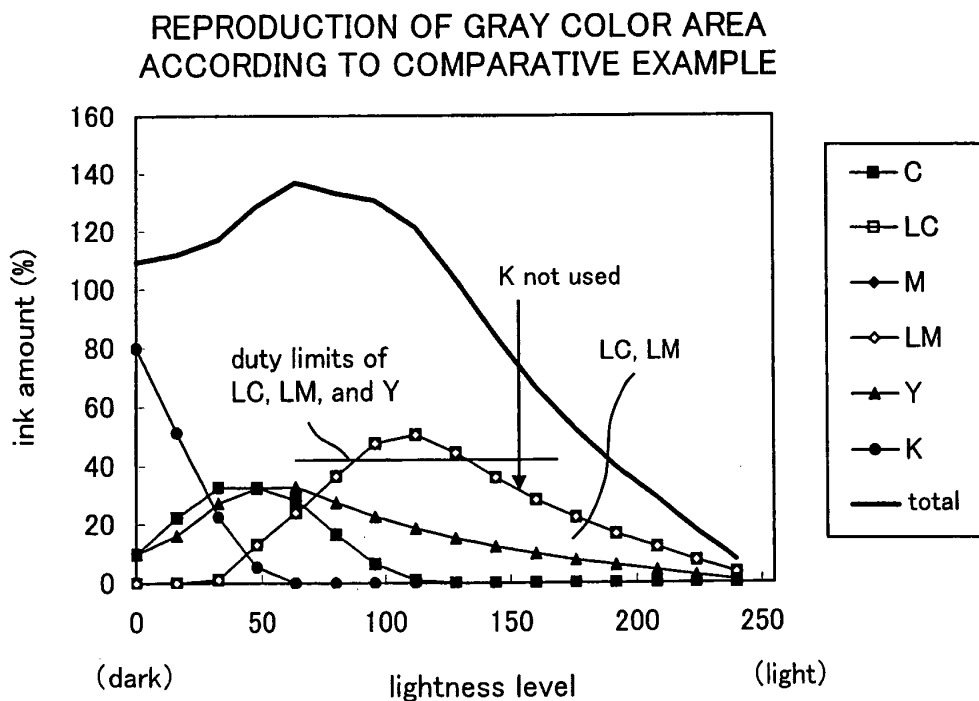


Fig. 12(A)

TEST PATTERN EXAMPLE FOR
DETERMINING INK DUTY LIMIT
(without bleeding)

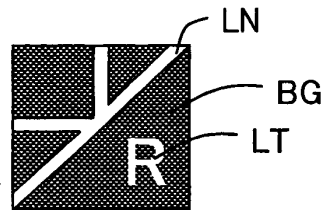


Fig. 12(B)

TEST PATTERN EXAMPLE FOR
DETERMINING INK DUTY LIMIT
(with bleeding)

